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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,015	10/24/2003	William C. Phillips	1023-292US01	9353
28863	7590	11/06/2006	EXAMINER	
SHUMAKER & SIEFFERT, P. A. 8425 SEASONS PARKWAY SUITE 105 ST. PAUL, MN 55125			HELLER, TAMMIE K	
			ART UNIT	PAPER NUMBER
			3766	

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,015

Applicant(s)

PHILLIPS ET AL.

Examiner

Tammie Heller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,11-13,15-20 and 22-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11-13,15-20 and 22-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/27/06, 8/30/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on July 28, 2006 has been received and considered. By this amendment, claims 6, 19, 24, and 28 have been amended, claims 3 and 21 have been cancelled, claim 37 has been added, and claims 1, 2, 4-9, 11-13, 15-20, and 22-37 are now pending in the application.

Response to Arguments

2. Applicant's arguments filed July 28, 2006 have been fully considered but they are not persuasive.

3. Regarding claim 1, Applicant argues that Stein fails to teach that the battery bay, defined by battery contacts 77 and rear opening 86, extends at least partially into the aperture formed by antenna coil 66. Further, Applicant argues that Stein fails to teach that the battery bay extends into the programmer in substantial alignment with the aperture. Although Stein does not expressly disclose that the battery bay extends into the aperture formed by antenna coil 66, it is evident from Figure 9 that when the patient programmer 10 is fully assembled, the battery bay extends at least partially into the aperture formed by antenna coil 66. When assembled, antenna coil 66 abuts circuit board 68. The placement of batteries 76 in battery contacts 77 within circuit board 68 will cause the battery bay to extend at least partially into an be in substantial alignment with the aperture formed by antenna coil 66.

4. Regarding claims 4 and 15-16, Applicant argues that because Stein fails to teach a battery bay that extends into the programmer in substantial alignment with the aperture, design choice is not capable of overcoming this deficiency. However, as

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discussed above, Stein in fact teaches a battery bay that extends into the programmer in substantial alignment with the aperture formed by antenna coil 66. Therefore, the rejection of claims 4 and 15-16 is upheld.

5. Regarding claim 19, Applicant argues that the Stein reference fails to suggest the arrangement of the battery bay such that it is aligned substantially concentrically with the aperture formed by internal antenna 66. Applicant contends that concentric alignment of the battery bay with the aperture formed by the internal antenna is advantageous in order to reduce the programmer size. As depicted in Figure 9, the battery bay formed by contacts 77 and battery 76 shares a common axis of symmetry with the internal antenna 66. Therefore, the Examiner takes the position that this alignment represents a "substantially concentric" alignment with the aperture.

6. Regarding claims 5 and 23, Applicant argues that while Lebel teaches that additional circuit boards may be utilized in order to incorporate the different control electronics, Lebel and Stein both fail to disclose a second circuit board disposed over the first circuit board and Lebel merely states that additional boards may be mounted "within, on, or even in some cases external to a device housing." In paragraph 16 of Applicant's disclosure, it is explained that a "separation distance between the circuit boards may serve to reduce the effects of electrical and electromagnetic interference caused by the display on signals transmitted and received by the internal antenna." However, Applicant fails to address the specific alignment of the second circuit board disposed over the first circuit board. It is inherent that when a second circuit board is incorporated in the invention of Stein, as taught by Lebel, it will be oriented in a manner

similar to the orientation of circuit board 68. Therefore, it is inherent that when a second circuit board is incorporated into the invention of Stein, that second circuit board will be disposed over the first circuit board 68 due to the similar orientation of the two boards.

7. Regarding claims 13 and 30, Applicant argues that neither Stein or Stanton, either singularly or in combination, teach each and every feature recited in independent claims 1 and 19 and dependent claims 13 and 30. As previously discussed, Stein teaches each aspect of the Applicant's invention with regards to claims 1 and 19. Furthermore, in combination with Stanton, Stein teaches the use of an external antenna 28 coupled to the programmer via a cable in order to increase the ease with which patients are able to perform their own programming sessions (see Figure 1).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 17, 19, 20, 33, 35, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Stein et al (US 2004/0230246). Regarding claims 1 and 17, Stein et al. discloses the same invention including an internal antenna mounted within the programmer housing which defines an aperture (see internal antenna 66 in Figure 9). The battery bay 76 extends into the aperture formed by the antenna loop 66.

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3. Regarding claim 2, a load is presented to an antenna when batteries are placed within its magnetic field. This load enhances noise immunity of the internal antenna to external electromagnetic interference. From Figure 9 of Stein et al. it is observed that the batteries are located within the magnetic field of the antenna and therefore present a load to the antenna. Therefore, the placement of the batteries in Stein et al. inherently places a load on the internal antenna in order to enhance noise immunity to external electromagnetic interference.

4. Regarding claims 19 and 33, Stein et al. discloses a programmer for a medical device comprising a programmer housing, a loop-shaped internal antenna which defines an aperture, and a battery bay formed within the housing which extends into the aperture formed by the antenna. Furthermore, as depicted in Figure 9, the battery bay formed by contacts 77 and battery 76 shares a common axis of symmetry with the internal antenna 66. Therefore, the Examiner takes the position that this alignment represents a "substantially concentric" alignment with the aperture.

5. Regarding claim 20, a load is presented to an antenna when batteries are placed within its magnetic field. This load enhances noise immunity of the internal antenna to external electromagnetic interference. From Figure 9 of Stein et al. it is observed that the batteries are located within the magnetic field of the antenna and therefore present a load to the antenna. Therefore, the placement of the batteries in Stein et al. inherently places a load on the internal antenna in order to enhance noise immunity to external electromagnetic interference.

6. Regarding claims 35 and 36, Stein discloses in Figure 9 that the antenna 66 is mounted to circuit board 68 via the two-pronged connected located on the distal edge of antenna 66. Mounting in such a way creates a space between the antenna and the circuit board, so it is therefore inherent that this space will be substantially filled by the battery bay extending into the antenna aperture.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 15, 16, 22, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. Regarding claims 4 and 22, Stein discloses the invention essentially as claimed by fails to disclose that the battery bay is sized to accommodate AAA batteries. The Examiner takes Official Notice that it is well known in the art to use commercially available batteries to power patient programmers so that it is not necessary for the patient to visit their physician when the batteries are low on the programmer. Therefore, it would have been obvious to one of ordinary skill in the art to modify the programmer of Stein et al. to accommodate commercially available batteries such as AAA batteries to offer an additional level of convenience to the patient.

9. Regarding claims 15 and 31, examiner takes Official Notice that it is well known in the antenna art to construct an internal antenna from a plastic frame wound with conductive winding in order to enhance the noise immunity of the antenna. The

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conductive winding is wound such that the direction of the helix determines the type of signal (either right or left-handed) the antenna is able to receive. The antenna consequently only receives the signals for which it is designed and noise from other sources is eliminated. Therefore, it would have been obvious to one of ordinary skill in the antenna art to construct the antenna of Stein et al. from a plastic frame wound with conductive winding in order to further increase the noise immunity of the antenna. Applicant's attention is directed to U.S. Patent No. 3,683,389 to Hollis, Figure 1, where the coil/loop antennas 32 and 36 are wound on dielectric frame 28.

10. Regarding claims 16 and 32, examiner takes Official Notice that it is well known in the antenna art to use copper-braiding as a shielding mechanism for antennas to shield the electromagnetic field of the antenna and reduce electrical and electromagnetic interference caused by the antenna. Therefore, it would have been obvious to one of ordinary skill in the art to shield the antenna of Stein et al. using copper braiding in order to reduce electrical and electromagnetic interference and reduce antenna loading during transmission and reception. Applicant's attention is directed to U.S. Patent No. 2,203,517 to Beggs where shield 28 surrounds the loop antenna 3 wound on dielectric frame 27.

Claims 5-9, 11-12, 18, 23-28, 34, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. in view of Lebel et al. (U.S. Patent No. 6,648,821). Regarding claims 5-7, 23-25, and 37, Stein discloses the invention essentially as claimed, but fails to disclose a second circuit board disposed over the first circuit board.

Lebel et al. teaches of a communication device to communicate therapy parameters to an implantable medical device which includes a number of circuit elements to control the different elements of the communication device. Lebel et al. discloses that "more or less of the control electronics may be implemented within one or more processor integrated circuits" (see Col. 41, ln. 63-67 and Col. 42, ln. 1-15). According to Lebel et al., additional circuit boards may be added to a programmer for a medical device as is necessary in order for the programmer to perform additional functions. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate an additional circuit board into the programmer of Stein et al. in order for the programmer to perform all of the functions desirable for its use. It is inherent that when a second circuit board is incorporated in the invention of Stein, as taught by Lebel, it will be oriented in a manner similar to the orientation of circuit board 68. Therefore, it is inherent that when a second circuit board is incorporated into the invention of Stein, that second circuit board will be disposed over the first circuit board 68 due to the similar orientation of the two boards.

11. Regarding claims 8 and 26, the invention is disclosed by Stein et al. in view of Lebel et al. essentially as claimed except both Stein et al. and Lebel et al. remain silent as to the configuration of the antenna and display units within the programmer. Examiner takes Official Notice that it is well known in the art to orient the antenna such that it faces toward the patient's body when the programmer is in use to ensure efficient communication between the programmer and the implantable device. Furthermore, it is well known to orient the display such that it faces away from the patient's body in order to allow the patient to observe information given on the display while the programmer is

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in use. Therefore, it would have been obvious to one of ordinary skill in the art to modify the antenna and display units of either Stein et al. or Lebel et al. such that the internal antenna is mounted to the first circuit board on a side opposite to the second circuit board, and the display unit is mounted to the second circuit board on a side opposite to the first circuit board in order for the antenna to efficiently communicate with the implantable device and for the patient to view the information contained on the display unit while the programmer is in use.

12. With respect to claims 9 and 27, as disclosed by Lebel et al., each of the circuit boards contained within the programmer can contain different circuitry to perform the necessary tasks of the programmer. Additionally, Lebel et al. discloses a first circuit board coupled to a second circuit board via an electrical interface (see col. 3, ln. 8-24).

13. With respect to claims 11, 18, 28 and 34, the device of Lebel et al. can be used with implantable neural stimulators (see col. 2, ln. 29). Additionally, the telemetry circuitry of both Stein et al. and Lebel et al. transmits and processes signals via the antenna.

14. With respect to claims 12 and 29, the device of Lebel et al. has a liquid crystal display (see col. 24, ln. 63 and Figure 2, LCD display 36).

15. Claims 13 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. in view of Stanton et al. (US Patent No. 6,249,703). Stein et al. discloses the invention essentially as claimed except for the external antenna coupled to the programmer via a cable. Stanton et al. teaches the use of an external antenna 28

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that is coupled to the programmer via a cable in order to increase the ease with which patients are able to perform their own programming sessions (see Figure 1). The use of an external antenna coupled to the programmer makes it possible for the programming sessions to occur when the programmer is not located on the implant site. This is desirable for a number of patients who are not able to easily reach the implant site to position the programmer. Therefore, it would have been obvious to one of ordinary skill in the art to combine the external antenna of Stanton et al. with the programmer of Stein et al. in order to increase the ease with which patients can utilize the programmer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammie Heller whose telephone number is 571-272-1986. The examiner can normally be reached on Monday through Friday from 7am until 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on 571-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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